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ABSTRACT

Technical writers involved in an institutional writing project need some way of viewing the raw material globally before writing. In this way they can build a framework which can be used for different types of information. This is accomplished through a task analysis meeting that highlights the following preparatory steps prior to writing: (1) determine the scope, (2) define the audience and identify the reader, (3) determine the purpose, (4) determine the task or tasks, and (5) determine the constraints--posed by the system or by how the document will be used. The purpose of the task analysis meeting is, therefore, to elicit from the subject matter experts information that is procedurally and user oriented. The goal of the meeting is to have participants generate tasks that fit into four columns: action, audience, information requirements, and result. The information generated in this collective exercise is more comprehensive than what can be extracted through individual interviews. Performing this type of task analysis before writing a single word may make the difference between designer-based material and usable, reader-based material. (HOD)

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Task Analysis: Applying Composition Theory in an Industrial Forum

Candace Soderston

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Bridging the gulf between academic theory and basic research, on the one hand, and industrial applications on the other, is a challenge in any profession. In our own profession, writing theorists have been preaching the importance of a pre-writing stage for decades. More recently composition research has shown that this preparation stage is a prime determinant of document quality. Within industry we are taking note of and applying these recommendations to our mode of operation. The task analysis meeting is one particularly effective and efficient way of preparing for a writing project. A scenario of a task analysis meeting is provided to show how this can be done.

The Theoretical Rationale for a Pre-writing Stage in Composing

As writing teachers have been asserting over the past decades, the crucial first step in any writing project is preparation. This preparation is usually broken down, in an attempt to move from the abstract to the concrete, into three main substeps: identifying the reader, establishing the objective, and determining the scope of the writing assignment.

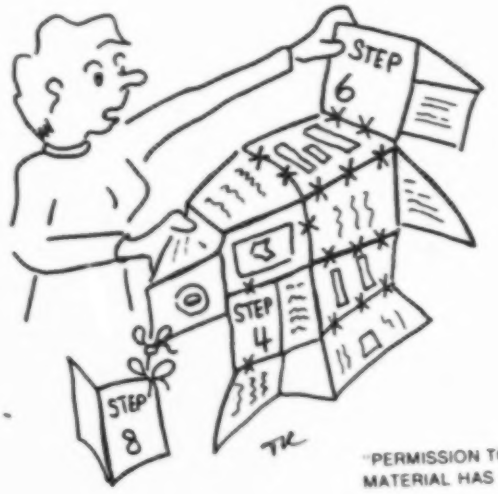
More recently Linda Flower, a leader within the field of composition research at Carnegie Mellon University, has emphasized the importance of transforming writer-based prose into reader-based prose.(1) Though writer-based prose might be perfectly comprehensible to its author, it may be terribly confusing to its intended audience. I don't suppose it will tax most of us in the field of technical communication to understand why this could be so.

Writer-based prose, with its egocentric focus, its narrative organization, and its survey structure, lacks the primary ingredient that contributes to the attribute "usability." That is, the ideas are not organized around the ***reader's needs and goals***. Somehow, in this situation, the writer neglected to identify the reader and to ***write with this person's objective in mind***.

With this advice from both our traditional writing teachers and leaders within the field of composition research, we are aware of the great importance of the very early phase in the writing process. Faced with the constraints of reality, however, can most of us expect to bring these concerns to fruition in a discrete planning stage?

The Real Link Between Preparation and Usable Documents

Faced with the inevitable shortness of time and, if we are lucky, a wealth of writer-based (read "designer-based") raw material, we are in constant danger of neglecting these cardinal concerns when drafting our documents. Production deadlines and current operating procedures may lead some writers to conclude, regretfully, that the best they can do is to perform a patchwork function: that is, gather the source material, stitch it together here and there with appropriate transitions, polish this sentence, and clear up that syntactic ambiguity. The result of this labor is a writer-based document with a survey structure, but at least, we writers can proudly assert, we've presented a ***comprehensive*** survey. If the readers hunt through our material long enough, with tenacity, we are sure they will be able to find every piece of information that they could ever possibly need.



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Unfortunately, this type of document structure is not usable since it is not organized around the reader's needs and goals.

Bond, Hayes, and Flower, doing research for the Document Design Center in Washington, D.C., studied the processes that several writers went through to revise writer-based legal documents into reader-based material.(2) They found that the best revisions were produced by those writers who read through the ***entire*** document before making any changes. These writers went on to massively reorganize the material, while the others simply polished sentences here and there to improve the existent flow.

Similarly, when we are not revising, but instead are creating a document, we need some way of viewing the material globally ***before*** writing. In this way we can build the framework into which to insert each piece of information.

The Task Analysis Meeting as Preparation for Writing

Given sufficient time, good technical writers can, without other institutionalized structures, sift the reader-based wheat from the designer-based chaff. By studying the technical source material, by painfully but steadily processing it through our own gray matter, by learning the characteristics of our users, and by individually tracking down and interviewing the appropriate developers, we can determine the appropriate structure for our documents. Seldom, however, do we have enough time allotted to do superb work given this methodology.

Our professional challenge, therefore, is to streamline our processes, to most quickly, efficiently, and productively manage the time available in order to transform the mass of designer-based raw material into an organized, high quality, reader-based flow.

The remainder of this paper describes such a streamlined process, the ***Task Analysis Meeting***. This meeting is an institutionalized forum for accomplishing what we know to be the all-important preparatory steps in any writing assignment. Hearkening back to our writing teachers' words of wisdom and using the Document Design Center's expansion upon the preparation stage, prior to writing we should do the following:

1. Determine the scope
2. Define the audience (identify the reader)
3. Define the purpose (establish the objective)
4. Determine the task or tasks
5. Determine the constraints (posed by the system or by how the document will be used).

Though this meeting is labeled a "task analysis" because determining the tasks or tasks is the primary focus, you will see shortly that this structure actually encompasses all the preparatory steps.

A Scenario of a Task Analysis Meeting

Robert Ward has outlined the general steps involved in analyzing task structure. As we know, we human beings learn best by example. Most of us, therefore, provide abundant scenarios in our literature, in order to aid our readers. In the jargon from Carnegie Mellon, we "instantiate" our scenarios for our readers. In plain English, and in the spirit of a good technical communicator, I'd like to provide you with a concrete example, a case study of this proposed information development forum, the task-analysis meeting.

I'm drawing this example from my experience last summer as a writer on a special project at IBM in Kingston, N.Y. Robert Ward set up and presided over a task-analysis meeting that took place before I set pen to paper or, more accurately, before I set finger to keyboard. The reason I can hold this experience up to the light is because it was an acclaimed success. Moreover, there was no new development effort necessary for this project, no new code needed to be written; the project involved documentation alone.

Let me qualify myself at this point and make it clear that, while the output of the project was documentation, the success of the project did not rest upon publications personnel alone. Many people were critical to the project, including product designers, developers, and testers. The task analysis alone would not have been sufficient to ensure the quality of the documentation, but it was the crucial first step. This important first step was followed by usability walkthroughs, human factors testing, technical reviews, and hands-on use of the documentation in the Systems Test laboratory.(4) This paper, however, will focus upon the first step, preparation, and its role cannot be minimized.

For this task analysis meeting, Ward reserved a conference room for three hours and invited representatives from Product Usability, Product Design/Development, Quality Assurance, Systems Test, and Publications. Depending upon the nature of your project, you might want to include others such as field engineers, service engineers, and marketing representatives.

The Explicit Purpose of the Task Analysis Meeting

Typically, the raw source material for any new product or function is written by experts on the subject matter. The material is organized around the internal structure of the product or function and is not written to explain its use or even to promote understanding. This makes sense, since the prime function of the person doing this writing is to ***develop*** the product. The entire interest of the designer is, and had better be, focused on the simplicity and elegance of the internal structure.

Teaching someone how to ***use*** the product is an entirely different concern, however. The purpose of the task-analysis meeting is, therefore, to elicit from the subject matter experts, information that is procedurally and user oriented.

Ward introduced the goals of the meeting to the ten of us present and outlined ***our*** tasks for the day. On a flip chart, he set up four vertical columns. The column labels from left to right were the following:

- Action
- Audience
- Information Requirements
- Result

Note: Environment would normally be another column but in this particular case we had already identified the environment and it was not a variable.

We were to generate, in the proper sequential order, all of the tasks that our users would have to perform in order to use this new capacity. For each task we would then identify who exactly in our typical consumer's company would be performing the task, what information that person would require in order to perform the task, and what results we expected upon completion of the task.

For example, in this initial meeting, we concluded that there were ten major tasks involved in this procedure. Task number 2 was planning and included planning for hardware configuration and software customization. The targeted audiences were the hardware administrator and two software system administrators. These titles implied, of course, a certain educational and experiential background. The information required was a list of sequential steps needed to make a particular connection. The result we expected upon completion of this task was a list of logical addresses and station addresses to pass on to the person performing the next task.

Just to give you an idea of the range of tasks and audiences involved in this project, task number 6 was logging on to a word processing product. Our targeted audience was a text operator, such as a secretary. This operator would require the log-on procedure and information on correcting the typical errors that could occur during the log-on process. The result we expected upon completion of this task was that the operator could edit text files.

As the group generated this information, Ward wrote it all down on the flip chart. As Peter Elbow asserts, the act of writing, the visual feedback we derive from the words we place on the page, actually helps us to pinpoint the gaps in

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Task 2: Planning

Action	Audience	Information Requirements	Result
Hardware Planning	Hardware Administrator	Description of hardware requirements for both systems	Hardware plan describing terminal locations, telephone lines, modems, diagram of physical addresses
System A Software Planning	System A Software Administrator	Description of System A's requirements for the connection	List of logical addresses and station addresses for use by System B's Administrator
System B Software Planning	System B Software Administrator	Description of System B's requirements for the connection List of addresses from System A's Administrator	System B Configuration Worksheet for use in next task

our thinking and to identify the directions in which we want to go.(5) The visual feedback from the flip chart helped us in our attempt to generate thorough and sequential material.

As in the cliche "the whole is greater than the sum of its parts," the information generated in this collective exercise was more comprehensive than we could have extracted through individual interviews. Moreover, not only was the information more comprehensive, but our use of time was ***much*** more efficient.

The success of the meeting depends on the writers' ability to extract procedural information from the developers. I recall asking questions out of my ignorance that slowed the pace of the meeting. These questions, however, resulted in concrete, step-by-step, procedural information, rather than an abstract overview that could inaccurately assume too much of the user. Ignorance is actually a blessing at this point in the process because it forces the writer to approach the material from the outside, from the perspective of a novice user.

Summary: The Importance of Task Analysis

In closing, why should we bother with task analysis or, more importantly, why should we care to produce reader-based material? Coming from the outside in, the consumer's first contact with our products is usually through our documentation. As we know, first impressions are extremely resistant to change so, unless we have a captive market, we can ill afford to create a negative first impression. It is doubtful whether the consumer can distinguish between product usability and document usability and, therefore, non reader-based literature could be severely damaging. Performing this type of task analysis before writing a single word, satisfying the prescriptions of writing theorists, may make the difference between designer-based material and ***usable***, reader-based material.

REFERENCE NOTES

1. Flower, Linda. ***Problem-solving Strategies for Writing.*** New York: Harcourt Brace Jovanovich, Inc., 1981.

2. Bond, Sandra J., Hayes, John R, & Linda S. Flower. ***Translating the Law into Common Language: A Protocol Study***, Technical Report No. 8, Document Design Project, American Institute for Research, National Institute of Education, Washington, D.C., April 1980.

3. See ***"A Task Analysis Primer"*** by Robert Ward, in these proceedings.

4. For further information on these other phases, see ***"User Testing as an Information Development Activity: Writing with Pen and Screwdriver"*** by Roger Grice, in these proceedings.

5. Elbow, Peter. ***Writing without Teachers***, England: Oxford University Press, 1975.

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